

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
31 March 2005 (31.03.2005)

PCT

(10) International Publication Number
WO 2005/029623 A2

(51) International Patent Classification⁷: **H01M 8/02** [JP/JP]. OTANI, Keizo [JP/JP]. OOE, Shinji [JP/JP]. KANO, Makoto [JP/JP].

(21) International Application Number: **PCT/JP2004/012231** (74) Agents: MIYOSHI, Hidekazu et al.; Toranomon Kotohira Tower, 2-8, Toranomon 1-chome, Minato-ku, Tokyo 105-0001 (JP).

(22) International Filing Date: 19 August 2004 (19.08.2004)

(25) Filing Language: English (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(26) Publication Language: English

(30) Priority Data:
2003-330633 22 September 2003 (22.09.2003) JP
2004-162988 1 June 2004 (01.06.2004) JP

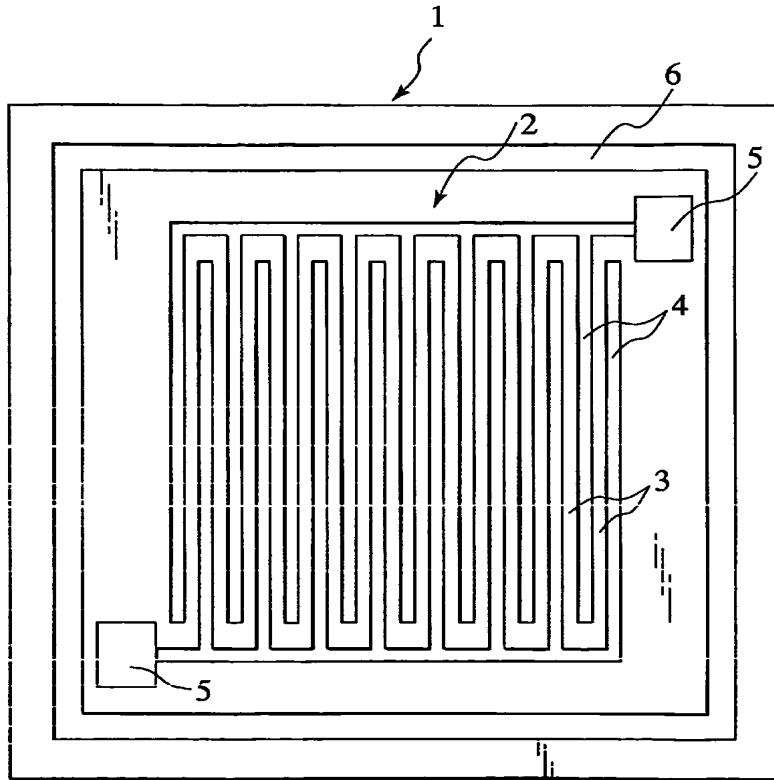
(71) Applicant (for all designated States except US): NISSAN MOTOR CO., LTD. [JP/JP]; 2, Takara-cho, Kanagawa-ku, Yokohama-shi, Kanagawa 2210023 (JP).

(72) Inventors; and (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

(75) Inventors/Applicants (for US only): CHIBA, Nobutaka

[Continued on next page]

(54) Title: SEPARATOR FOR FUEL CELL, FUEL CELL STACK, METHOD FOR MANUFACTURING SEPARATOR FOR FUEL CELL, AND FUEL CELL VEHICLE



(57) Abstract: A separator for a fuel cell comprises a corrugated or undulated gas flow path portion (4) formed on central portion (2) of a clad thin plate: and a flat portion (6) formed on an outer periphery of the central portion, wherein the clad thin portion is obtained by applying rolling work on a metal plate whose surface is covered with a precious metal layer at a draft of 5% to 15% to make clad, and a limit plate thickness residual rate indicating a boundary limit in which cracking of the precious metal layer in the clad thin plate and reduction of corrosion resistance due to exposure of the metal plate are negligible is obtained in advance, wherein regarding a sectional shape in a direction orthogonal to a flow path of the gas flow path portion (4), when a plate thickness of the thinnest portion of a rib shoulder portion is represented as $t2$ and a plate thickness of a peripheral portion of the separator is represented as $t4$, a relationship of $t2 \geq t4 \times \text{limit plate thickness residual rate}$ is satisfied.

WO 2005/029623 A2



European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *without international search report and to be republished upon receipt of that report*